

U. S. Patent Application of

Timothy P. Barber

relating to a

METHOD FOR BILLING FOR SERVICES DELIVERED OVER A COMPUTER NETWORK

Express Mail No.: EM 173 440 394 US

19950801 0609560

METHOD FOR BILLING FOR SERVICES DELIVERED OVER A COMPUTER NETWORK

CROSS REFERENCE TO RELATED APPLICATION

Reference is made to and priority claimed from U.S.  
provisional application Ser. No. 60/096,304, filed Aug. 12, 1998,  
5 entitled METHOD FOR BILLING FOR SERVICES DELIVERED OVER A COMPUTER  
NETWORK.

FIELD OF THE INVENTION

The present invention pertains to billing (charging) for  
services delivered over a computer network, and in particular to  
billing (charging) on a per unit time basis for providing access  
to information over the computer network.

BACKGROUND OF THE INVENTION

When a consumer purchases information over a computer  
network, in the case that the consumer pays for the information  
based on how long the consumer maintains access to the  
information, one obstacle to be overcome is the reluctance of a  
consumer to trust the vendor supplying the information. The  
consumer must trust the information vendor in two respects:  
first, to provide information of acceptable quality, and second,  
20 to charge the consumer accurately, based on the time the consumer  
maintains access to the information.

What is needed is a way to overcome this obstacle and so  
promote the sale of information over a computer network.  
Ideally, a method overcoming the obstacle would have various  
25 desirable features. One such feature is that the consumer would  
not need to reveal the consumer's identity to the vendor;

providing credit card information to a vendor over a computer network is always a source of concern to consumers. Ideally also, the consumer would not need to trust the information vendor to correctly compute the charge for delivering the paid-for-information services. Further, because today people move from computer location to computer location, the consumer should not have to maintain a single network address to be billed for purchases made at different addresses; the consumer should be able to move from one location to another on the computer network and still be billed as the same entity.

Further still, the consumer should not need any special software. The consumer should have of course the software required to access other locations over the computer network, but should not need software dedicated to billing. In the case that the computer network is the Internet, the purchaser should need a web browser, but ideally, no more. In contrast, the information vendor probably would need some software dedicated to billing, but ideally, this software would be only software for verifying and canceling transactions.

Ideally also, although the vendor does not receive billing information from the consumer, nevertheless the vendor should be solely responsible for actually providing the information being purchased and also responsible for its content. Finally, a consumer should be able to make multiple purchases of access to information from a vendor without having always to re-establish authorization for each different access to information from the same vendor.

SUMMARY OF THE INVENTION

Accordingly, the present invention is a method of billing for providing access to information over a computer network with the charge billed based on the time a consumer elects to access the information, distinguished primarily by including a third party, called here a bank, to mediate between the consumer and the information vendor in such a way as to relieve the vendor of any involvement in billing the consumer, but leaving the vendor responsible for the quality of the information provided to the consumer.

According to the present invention, a vendor establishes an account with the bank and provides to the bank an address on the network, called here a session connect address, which a consumer is to access to acquire information from the vendor. In turn, the bank provides the vendor with a start session address, which is an address of the bank (a server operated by the bank) to which the vendor is to direct a consumer to start the clock for timing access by the consumer to information provided by the vendor. Thus, with this arrangement, when a consumer visits a vendor network address and decides to purchase access to information from the vendor, the consumer will exercise a link that will put the consumer in contact with the bank and so initiate billing, and the bank will then direct the consumer to the location at the vendor (a server operated by the vendor) where the information can be accessed. The method also includes a means by which the bank is made aware of the time at which the consumer finishes accessing the vendor's information, and can thus provide a charge to the consumer based on the time the consumer spends accessing the vendor's information.

Access of the vendor information by the consumer occurs as follows. First, a consumer accesses the network address of a vendor who has set up an account with the bank as described above. In response, the vendor transmits to the consumer a page with a pricetag link. Essentially, the page with the pricetag link provides enough information to the consumer for the consumer to decide whether to look further into purchasing information from the vendor. If the consumer exercises the pricetag link, the consumer machine is directed to the bank, which then returns to the consumer a page of information, called the pricetag page, that includes the price-per-unit time for access to information by the particular vendor, the maximum duration of the connection that the consumer is authorized, and a link to a start session address, which is an address at the bank (i.e. of a server operated by the bank).

If the consumer elects to purchase access to information from the vendor, the consumer exercises the start session link. Then the bank returns to the consumer an end session address, which the consumer can use to terminate the purchase of information from the vendor earlier than waiting for the maximum duration time to expire, and an authentication code. At the same time, the bank can provide to the vendor the consumer authentication code and the consumer address, and notes the time of the exercise of the start session link to begin charging the consumer. In some applications, the bank provides this information to the vendor directly. In other applications, however, the bank redirects the consumer's computer so that it links to the vendor and in so linking passes to the vendor the

consumer authorization code and consumer address as parameters of the link process.

In response to receiving the consumer authorization code, the vendor provides to the consumer a page (of network communication) that provides links to various information documents offered by the vendor. (This page is located at the connect address of the vendor.) The consumer may then exercise various of the links to the vendor's information.

In response to the exercise of each link, the vendor provides the consumer with the requested information. The consumer can exercise the end session link at any time or wait until the maximum duration has expired. If the consumer exercises the end session link, the consumer machine is connected to the bank, which then notifies the vendor that the consumer access is terminated, and records the time at which the end session link was exercised to stop charging the consumer.

#### BRIEF DESCRIPTION OF THE DRAWINGS

The above and other objects, features and advantages of the invention will become apparent from a consideration of the subsequent detailed description presented in connection with accompanying drawings, in which:

Fig. 1 is a data flow diagram showing a vendor establishing an account with a bank;

Fig. 2 is a data flow diagram showing a consumer electing to purchase access to information from the vendor; and

Fig. 3 is a data flow diagram showing the consumer purchasing information from the vendor.

DESCRIPTION OF THE PREFERRED EMBODIMENT

Referring now to Fig. 1, according to the present invention a vendor 11 prepares to provide consumers, such as a consumer 10, with information over a computer network, as shown by future data flows 15, by first establishing an account with a bank 12 that acts as an intermediary between the vendor and any consumer 10. In establishing the account, the vendor provides the bank with a session connect address, and a session disconnect address, as shown by data flow 13. The session connect address is where the bank will direct a consumer who has elected to purchase access to information from the vendor, i.e. it is the address of information on a server operated by vendor. As shown by data flow 14, the bank provides the vendor with a secret encryption key, which will be used in verifying an authentication code used to uniquely identify the consumer. The bank also provides the vendor with an account identification and a start session address, i.e. an address on the computer network to which the vendor is to direct a consumer who has elected to purchase access to information in order to start a clock for tracking the time of access to be billed.

Referring now to Fig. 2, with an account in place, a consumer 10, as shown by data flow 21, accesses a general address of the vendor 11. In response, the vendor provides the consumer with a page of communication over the network that includes a link to a pricetag, as shown by data flow 22. The consumer examines this page and decides whether to find out more about purchasing information from the vendor. To find out more, the consumer exercises the pricetag link, as shown by data flow 23. If the consumer does exercise the pricetag link, the consumer is

actually placed in contact with the bank 12, which then provides to the consumer a page of communication over the computer network, called here the pricetag page, shown as data flow 24. It includes three items: the price-per-unit time of access to the vendor information; the maximum duration of this access beyond which the access will automatically terminate; and a start session link.

If the consumer then decides to purchase access to information from the vendor, the consumer exercises the start session link, as shown by data flow 25, and the bank then provides to the consumer an end session address and an authentication code as shown in data flow 26. The consumer can access the end session address at any time to end a session and to stop the bank from further charging the consumer. At the same time that the bank provides the consumer with the end session address, the bank also provides the vendor with the consumer authentication code and the consumer address, as shown in data flow 27; in the preferred embodiment, the bank does not communicate the consumer authentication code and consumer address directly, although such direct communication is a possible embodiment that would be used in some instances, but instead passes the consumer authentication code and address to the vendor indirectly, through the consumer, by including this information as parameters in the linking of the consumer to the vendor information. Using the consumer address, the vendor provides the consumer with a page of communication over the network that includes links to the vendor's information, as shown in data flow 28. Up to this point, the consumer has elected to purchase



access to information and is now being charged, but has yet to access any information documents from the vendor.

When the consumer accesses the start session address (by exercising the start session link,) the bank identifies the consumer by some protocol, which can be based on a log-in and password, a smart card, a challenge response, a digital certificate, IPSEC, or a password token.

Referring now to Fig. 3, the consumer 10 exercises one or more access links, each to a document of information to which access is made available by the vendor, as shown in data flow 31. In response to the exercise of each access link, the vendor provides to the consumer the requested information document, as shown in data flow 32. This request for information and the providing of information can continue until the maximum duration time is expired, or the consumer can terminate the access earlier, by accessing the end session address provided by the bank at the beginning of the session, this access as shown by data flow 33. If this happens, the bank sends a notice of end of session to the vendor, as shown by data flow 34.

In another aspect of the present invention, the consumer may have an account with the same bank or another bank, and may have established some pre-authorized spending limit with the bank or another bank. In that situation, the maximum duration figure provided by the bank (as part of data flow 24) is sometimes based on the spending limit the consumer has established.

At the end of the session, as shown by data flow 25, the bank notes the current time and sends a receipt to the consumer that indicates the charge made to the consumer. The notice of

end of session sent to the vendor is in fact the transmission by the bank of the consumer authentication code to the session disconnect address of the vendor. The vendor then cancels the consumer authentication code and, at the vendor's option, terminates the flow of information documents to the consumer.

Thus, with the method of the present invention, the bank knows the length of time for which to bill a consumer and so can perform impartial billing services for access to information over a computer network based on the duration of access.

It is to be understood that the above described arrangements are only illustrative of the application of the principles of the present invention. In particular, it should be understood that in referring here to billing for providing services, such as providing access to information, should be construed as a method of billing for access to any sort of software, including simple textual data, for which billing for time of access is sensible. Thus, for example, a consumer may wish to use executable software, for a period of time, in order to estimate how much life insurance the person should have according to standard estimates. Or a consumer might wish to access executable software, for a period of time, that makes available a video game or other diversion. In providing all of these kinds of services, only some of which are information in the narrow sense, the method of the present invention is of value because it facilitates billing based on time of access. And besides the specific embodiments disclosed here, numerous modifications and alternative arrangements may be devised by those skilled in the art without departing from the spirit and scope of the present invention, and the appended claims are intended to cover such

00000000000000000000000000000000